

GREAT MEADOWS NATIONAL WILDLIFE REFUGE

Concord, Massachusetts

NARRATIVE REPORT

Sept. -- Dec. 1959

REFUGE PERSONNEL

J. C. Appel  
Ralph H. Holderby

Refuge Manager  
Refuge Assistant

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1/23

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## NARRATIVE REPORT

### GREAT MEADOWS NATIONAL WILDLIFE REFUGE

Sept. - - Dec. 1959

#### I General

##### A. Weather Conditions.

The following information was furnished by the 6th Detachment, 4th Weather Group, United States Air Force, L. G. Hanson Field, Bedford, Mass. located about one mile from the refuge:

<u>Precipitation</u>				
	<u>Snowfall</u>	<u>Rain</u>	<u>Average</u>	
				<u>Maximum</u> <u>Temperature</u>
				<u>Minimum</u>
Sept.		1.18		88
Oct.		5.38		76
Nov.		5.48		63
Dec.	5.5	4.93		60
Total	5.5	16.97		88
				8

Precipitation for the month of Sept. was below normal. October precipitation of 5.38 was above normal. One storm on the 24th deposited 1.28 inches in a twenty-four hour period. There were sixteen days of rainfall this month. November was above normal, as was December.

##### B. Habitat Conditions.

1. Water: Water levels remained above spillway level with both marshes full.

2. Food & Cover: Both marshes produced heavy vegetation and produced a good supply of food. These areas were well utilized by both shore birds and ducks.

#### II Wildlife

##### A. Migratory Birds.

During the first part of Sept. ducks and geese began to move in and by the middle of the month we reached our peak, for the period, of 1900 ducks and 142 geese. This represents a drop from the 1958 peak of 3277 ducks and an increase of 92 geese.

American Widgeon peak was 50% below last year's. Black ducks were



down about 87% from last year. This may be caused by the modification of the migration pattern and/or failure of the nesting season.

Wood ducks showed a slight decrease compared to last year. Mallard, Pintail, Green-winged Teal, Blue-winged Teal, Shoveler, Ring-necked, Canvasback and Scaup showed up in near normal numbers.

One Whistling Swan was observed on Nov. 9, 1959 and was present up to the time the marsh froze over solid.

Shorebirds population near normal.

B. Upland Game Birds: Near normal.

C. Big Game Animals: Deer occasionally pass through the refuge.

D. Fur Animals, Predators, Rodents and Other Mammals:

a. Fur Animals:

No muskrat trapping is being done this season, except to protect dikes, in an effort to get heavy vegetation eaten out.

b. Predators, Rodents and Other Mammals:

Normal low or controlled populations.

E. Hawks, Eagles, Owls, Crows, Ravens and Magpies.

Populations normally low. No significant changes.

No eagles were observed this year.

Neighbor Richard Bordon pole-trapped three Great Horned Owls.

F. Other Birds.

No additions to refuge bird list. Nothing unusual to report.

G. Fish.

No fishing is allowed on the refuge.

H. Reptiles.

Populations normal. Mostly in hibernation this period.

I. Diseases.

Nothing to report this period.



### III Refuge Development and Maintenance

#### A. Physical Development.

1. Four hundred and fifty yards of bank run gravel were placed on the dike to repair washouts, muskrat holes, etc..

2.

The Newburyport, and Reading National Guard held two days of drill at this refuge. One was spent clearing brush along the boundary and trails. The other was spent building piers across the upper spillway to support a footbridge which will be constructed at a latter date.

3. Refuge Assistant spent two weeks assisting Parker River staff in improving Cross Farm to Bar Head road.

B. Plantings: None.

C. Collections and Receipts: None.

D. Control of Vegetation: None.

E. Planned Burning: To be submitted in the Narrative Report for the period ending in April.

F. Fires: None. The burning index for Sept. was high. Oct., Nov. and Dec. fire hazard was low.

### IV Resource Management

A. Grazing: None.

B. Haying: None.

C. Fur Harvest: None this period. Please see Wildlife D.

D. Timber Removal: None.

E. Commercial Fishing: None.

F. Other Uses: None.

### V Field Investigation or Applied Research

A. Forty-nine wood ducks were banded in compliance with R.O. memo of August 19, 1959.

### VI Public Relations

#### A. Recreational Uses

Many visits to the refuge were made by members of the Audubon Society, nature study groups, and students. Heaviest use occurred in

the months of March through October. Visitor days use was about the same or slightly lower than in 1958.

B. Refuge Visitors:

Samuel Hoar, Jr.	Attorney	Boston	Hunting
C. V. Greenough	Farmer	Carlisle	"
John S. Gottschalk	Reg. Director	Boston	Present Incentive Award
Robert Boone	Chief, Div. Wildlife	"	Orientation
Arthur F. Miller	Supv. Br. Refuges	"	Inspection
Merton F. Radway	Asst. Supv. "	"	"
Claude Lard	" " "	"	Orientation

Refuge Manager Appel made several trips to this refuge for purposes of supervision.

C. Refuge Participation

Refuge Assistant Holderby gave several talks and slide shows to Service groups and Boy Scout Troops. Holderby also participated in the Retriever Trials, and the archery deer hunt at Parker River.

D. Hunting:

Refuge hunting by Samuel Hoar, Jr. and guest, C. V. Greenough, under retained hunting rights privilege, resulted in the taking of twenty-three ducks in eight use days.

Mr. Hoar recognizes the inconsistency of hunting on a small refuge and has offered to sell his retained hunting rights privilege to the Service. We are not able, for a variety of reasons, to take advantage of his offer.

E. Violations:

There were no violators of Federal or State regulations apprehended during this period on the refuge.

VII Other Items

Ralph Holderby, Refuge Assistant, cut his right arm artery in three places when he tripped and fell through a door window at the gaso-line station next door to his house on Christmas Eve. He was rushed to the local hospital where he was given seven pints of blood. A 7 inch plastic tube was inserted in his arm to take the place of the artery which was removed. We are not expecting him back to work before Feb. 1, 1960.

Period ending December 31, 1959

Approved

*J. C. Appel*  
Refuge Manager

Date \_\_\_\_\_

\_\_\_\_\_  
Regional Refuge Supervisor

Date \_\_\_\_\_

\_\_\_\_\_  
Regional Director

W A T E R F O W L

REFUGE Great Meadows N.W.

MONTHS OF September TO December, 19 59

(1) Species	(2) Weeks of reporting period									
	9/1-7	9/8-14	1/15-21	9/22-28	9/29-10/5	10/6-12	10/13-19	10/20-26	10/27-11/2	11/3-9
<u>Swans:</u>										
Whistling Trumpeter										
<u>Geese:</u>										
Canada	10	47	142	43	43	42	25	42	16	32
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
<u>Ducks:</u>										
Mallard	25	75	75	100	50	50	75	50	25	15
Black	125	200	175	150	150	175	200	150	150	200
Gadwall										
Baldpate	15	25	1000	500	250	250	350	450	150	300
Pintail					5	6				5
Green-winged teal				10	10	10	30	50	20	35
Blue-winged teal	50	75	50	50	25	30	50	25	25	5
Cinnamon teal										
Shoveler	2						2			
Wood	430	500	600	300	300	300	300	300	200	15
Redhead										
Ring-necked						4	5	2	5	
Canvasback										
Scaup					10	10	10	10		
Goldeneye										
Bufflehead										
Ruddy										
Other							1053	1079	646	581
<u>Coot:</u>	10	5	20	10						



WATERFOWL  
(Continuation Sheet)

REFUGE Great Meadows N. W.

MONTHS OF Sept. TO Dec., 19 59

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11/10-16 11	11/17-23 12	11/24-30 13	12/1-7 14	12/8-14 15	12/15-21 16	12/22-28 17	12/29-31 18		
Swans:										
Whistling	1	1	1	1	1	1	1		49	
Trumpeter										
Geese:										
Canada	25	12	42	12	12	42	10		4179	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	75	20	5	4	20	30	10		4923	
Black	125	250	70	11	25	80	25		15,827	
Gadwall										
Baldpate	150	30							24,290	
Pintail	5	2	2	2	1	2			210	
Green-winged teal	20	10	4						1,393	
Blue-winged teal	10								2,695	
Cinnamon teal										
Shoveler									23	
Wood	25	15	10			2	1		23,086	
Redhead										
Ring-necked									112	
Canvasback									35	
Scaup									280	
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:		40							595	

(over)

	(5)	(6)	(7)
	Total Days Use :	Peak Number :	Total Production
Swans	<u>49</u>	<u>1</u>	
Geese	<u>4,179</u>	<u>142</u>	
Ducks	<u>72,884</u>	<u>1900</u>	
Coots	<u>595</u>	<u>40</u>	

SUMMARY	
Principal feeding areas	<u>Marshes</u>
Principal nesting areas	<u>Marsh edges and nest boxes.</u>
Reported by <u>Ralph Holderby (by Thomas Stubbs)</u>	

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

## Great Meadows N. W. Refuge

Dec. 31, 1959

	Peak Calendar Year Populations	Production by Species	Total Duck Use Days	Total Goose Use Days	Total Brant Use Days	Total Production Ducks & Geese
<u>Geese:</u>						
Canada	142					
Brant	--				--	441
<u>Ducks:</u>						
Mallard	100					
Black	250	39				
Baldpate	1000					
Pintail	6					
Green-winged Teal	50					
Blue-winged Teal	75					
Wood	600	402				
Ring-necked	5					
Canvasback	5					
Scaup	10					
Peak total ducks	1900	Total				441
			245,658	6,957	--	



3-1751

Form NR-1A  
(Nov. 1945)MIGRATORY BIRDS  
(other than waterfowl)Refuge Great Meadows N. W. Months of Sept. to Dec. 1959

(1) Species  Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young.	Estimated Number
<u>I. Water and Marsh Birds:</u>										
Great Blue Heron	2	9/6	5	9/26	1	11/5				5
Common Egret	1	9/6	1	9/6	1	9/12				1
Green Heron	1	10/20	1	10/20	1	10/20				1
American Bittern	6	9/1	6	9/1	1	11/5				6
Least Bittern	1	9/15	1	9/15	1	9/15				1
*Virginia Rail	20	9/1	50	9/15	1	11/18				50
*Sora	15	9/1	30	9/11	1	11/18				30
*Sound counts										
 <u>II. Shorebirds, Gulls and Terns:</u>										
Killdeer	5	9/1	50	9/15	1	11/2				10
Common Snipe	3	9/1	5	10/2	1	10/10				5
Greater Yellowlegs	2	10/2	2	10/2	2	10/2				2
Herring Gull	5	9/1	30	12/5	30	12/10				30

(over)

(1)	(2)		(3)		(4)		(5)			(6)
III. <u>Doves and Pigeons</u> :										
Mourning dove	25	9/1	35	10/2	2	11/1				35
White-winged dove										
IV. <u>Predaceous Birds</u> :										
Golden eagle										
Duck hawk										
* Horned owl	1	9/10	1	9/10	1	9/10				1
Magpie										
Raven										
Crow	6	9/1	20	10/27	17	12/16				20
Neighbor Borden caught 3 in a pole trap										
						Reported by <u>Ralph Holderby</u>				

#### INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)  
 II. Shorebirds, Gulls and Terns (Charadriiformes)  
 III. Doves and Pigeons (Columbiformes)  
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

## INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.\*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\* Only columns applicable to the period covered should be used.



1752  
Form No. 2  
(April 1946)

UPLAND GAME BIRDS

Refuge Great Meadows

Months of Sept.

to Dec., 1945

1613

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks	
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge Pertinent information not specifically requested. List introductions here.	
Ruffed Grouse	Marsh edge and upland, approx. 50 acres	25	50:50	-	-	2	Released by Richard Borden
Bobwhite	Marsh edge and upland, approx. 50 acres	25	50:50	-	-	2	
Ring-necked Pheasant	Marsh edge and upland, approx. 50 acres.	2	50:50	-	-	25	

BIG GAME

Refuge Great Meadows

Calendar Year 1959

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White-tailed Deer	54 acres of hard wood and white pine and marsh edge											6	0	
Small refuge - Deer occasionally move through the area.														

Remarks:

Reported by J.C.Appel

# INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

116008



DISEASE

Refuge Great Meadows

Year 1959

Botulism

Period of outbreak \_\_\_\_\_

Period of heaviest losses \_\_\_\_\_

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) \_\_\_\_\_

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) \_\_\_\_\_

Condition of vegetation and invertebrate life \_\_\_\_\_

Remarks None observed

Lead Poisoning or other Disease

Kind of disease \_\_\_\_\_

Species affected \_\_\_\_\_

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered \_\_\_\_\_

Number lost \_\_\_\_\_

Source of infection \_\_\_\_\_

Water conditions \_\_\_\_\_

Food conditions \_\_\_\_\_

Remarks None observed

## PUBLIC USE

Great Meadows N. W.

Calendar Year 1959

Total Use  
Visitor-Days

2800

Hunting  
Use

2 men - 4 days

Fishing  
Use

None

Miscellaneous  
Use

2792

Hunting (on  
refuge lands)  
WaterfowlPercent  
.00021Visitor Days  
8Acres  
205

Recreation

Percent  
99.9Visitor-Days  
2792

Supervised by refuge X

Jump Shooting

Hunting off  
refuge lands: Estimated man-days of hunting on lands  
adjacent to the refuge 240

Hunting (stipulations in acquisition)

Fishing:

Acres of ponds or lakes 0 and miles of streams

0 open to fishing

3-1757  
Form NR-7  
(April 1946)

PLANTINGS  
(Marsh - Aquatic - Upland)

Refuge Great Meadows

Year 19459

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Plant- ing	Survival	Cause of Loss	Remarks
Nothing to report.								

TOTAL ACREAGE PLANTED:

Marsh and aquatic.....  
Hedgerows, cover patches.....  
Food strips, food patches.....  
Forest plantings.....



Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Great Meadows N. W. County Essex State Mass.

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
								Grass	1 acre
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations \_\_\_\_\_ Haying Operations \_\_\_\_\_ Grazing Operations \_\_\_\_\_

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				1 acre
Hay - Wild				2. Acreage Cultivated as Service Operation				1 acre

DIRECTIONS FOR PREPARING FORM NR-8  
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

3-1759  
Form NR-9  
(April 1946)

COLLECTIONS AND RECEIPTS OF PLANTING STOCK  
(Seeds, rootstocks, trees, shrubs)

Refuge Grant Meadows N. W. Year 1950

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period of Collection	Method	Unit Cost	Amount	Source		
Nothing to report.								

Interior Duplicating Section,  
Washington 25, D.C. 84267

Interior Duplicating Section,  
Washington 25, D.C. 84267



## TIMBER REMOVAL

Refuge Great Meadows N. W.Year 1959

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Nothing to report except clearing of boundary lines, trails, etc.								

Total acreage cut over.....

Total income.....

No. of units removed B. F. ....

Method of slash disposal.....

Cords.....

Ties.....

.....